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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/597,426

07/25/2006

J. Michael Drozd

2519.1

1804

9748

7590

04/19/2010

LAITRAM, L.L.C.  
LEGAL DEPARTMENT  
220 LAITRAM LANE  
HARAHAN, LA 70123

EXAMINER

VAN, QUANG T

ART UNIT

PAPER NUMBER

3742

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/597,426	<b>Applicant(s)</b> DROZD ET AL.	
	<b>Examiner</b> Quang T. Van	<b>Art Unit</b> 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Withdrawal of Allowable Subject Matter***

1. The indicated allowability of claims 2-6 is withdrawn in view of the newly discovered reference(s) to Johnson (US 3,673,370). The Examiner regrets for any inconveniences. Rejections based on the newly cited reference(s) follow.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

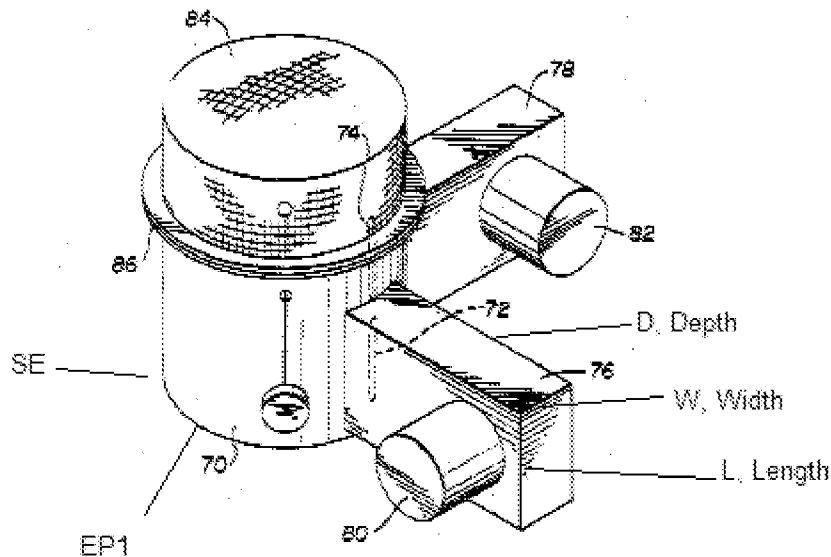
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 4-7, 11 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Johnson (US 3,673,370) new cited. Johnson discloses a microwave applicator system with cylindrical resonant cavity comprising a cylindrical wall (12a, Figure 1) extending axially from a first end to a second end and including an interior surface and an exterior surface and defining an axis, the cylindrical wall (12a) forming a first slot (57) between the interior and the exterior surfaces; an end plate (11b, 11c, 12b, 12c, col. 2, lines 75) closing off the second end (SE) of the cylindrical wall to form a cylindrical chamber; a first waveguide (51) forming an opening along the length of the waveguide (51); wherein the first waveguide (51) connects to the cylindrical chamber (10) with the opening in communication with the first slot (57) through which the first waveguide (51) couples microwave energy into the cylindrical chamber, and an elongated member (29) covered with material to be exposed to microwave energy and disposed coaxially within the cylindrical chamber (10).

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4. Claims 1, 7-9, 11, 18, 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Lynch et al (US 4,749,915) previously cited. Lynch discloses a microwave power electrodeless light source comprising a cylindrical wall (70, Figure 5) extending axially from a first end to a second end and including an interior surface and an exterior surface and defining an axis, the cylindrical wall (70) forming a first slot (72) between the interior and the exterior surfaces; an end plate (EP1) closing off the second end (SE) of the cylindrical wall to form a cylindrical chamber; a first waveguide (76) forming an opening along the length (L) of the waveguide (76); wherein the first waveguide (76) connects to the cylindrical chamber (70) with the opening in communication with the first slot (72) through which the first waveguide (76) couples microwave energy into the cylindrical chamber, and elongated member (122) covered with material to be exposed to microwave energy and disposed coaxially within the cylindrical chamber (70, Figure 8).



### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnson (US 3,673,370). Johnson discloses substantially all features of the claimed invention including an elongated member (29) covered with material to be exposed to microwave energy, but does not disclose the elongated member being a metal mandrel. It would have been obvious to one ordinary skill in the art at the time the invention was made to use a cylindrical chamber to treat an elongated member being a metal mandrel in order to heat treat the metal mandrel with high frequency heating chamber.

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7. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lynch et al (US 4,749,915). Lynch discloses substantially all features of the claimed invention including two slots at 90<sup>0</sup> circumferential intervals, but does not disclose the cylindrical wall form four slots at 90<sup>0</sup> circumferential intervals. It would have been obvious to one ordinary skill in the art at the time the invention was made to have four slots circumference intervals in order to provide maximum power to the chamber.

8. Claims 12-13 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lynch et al (US 4,749,915) in view of McKee et al (US 6,008,483) both previously cited. Lynch discloses substantially all features of the claimed invention except a mode stirrer in the cylindrical chamber at the end plate. McKee discloses a mode stirrer (25, Figure 2A) in the cylindrical chamber (26) at the end plate. It would have been obvious to one ordinary skill in the art at the time the invention was made to utilize in Lynch a mode stirrer in the cylindrical chamber at the end plate as taught by McKee in order to distribute the microwave evenly throughout the chamber.

9. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lynch et al (US 4,749,915) in view of McKee et al (US 6,008,483) and further in view of McKee et al (US 5,990,466) all previously cited. Lynch/McKee'483 disclose substantially all features of the claimed invention except at least some of the blades are axially offset from each other. McKee'466 discloses at least some of the blades (25, Figure 2) are axially offset from each other. It would have been obvious to one ordinary skill in the art at the time the invention was made to utilize in Lynch/McKee'483 at least

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some of the blades are axially offset from each other as taught by McKee'466 in order make the radiation exposure more uniform.

10. Claims 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lynch et al (US 4,749,915) in view of Firmain et al (US 3,775,709) both previously cited. Lynch discloses substantially all features of the claimed invention except spaced apart parallel bars extending across the opening in the first waveguide. Firmain discloses spaced apart parallel bars (8-15, Figure 4) extending across the opening in the waveguide. It would have been obvious to one ordinary skill in the art at the time the invention was made to utilize in Lynch spaced apart parallel bars extending across the opening in the first waveguide as taught by Firmain in order to control the distribution of energy in the chamber.

***Response to Amendment***

11. Applicant's arguments with respect to claims 1, 3-22 have been considered but are moot in view of the new ground(s) of rejection.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang T. Van whose telephone number is 571-272-4789. The examiner can normally be reached on 8:00Am 5:00Pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Quang T Van/  
Primary Examiner, Art Unit 3742  
April 12, 2010

Quang T Van  
Primary Examiner  
Art Unit 3742